FIG. 1

J Saline Control

PGF- $2\alpha - 1 \text{ hr } 10 \text{ mM sperm.}$ PGF- $2\alpha - 1 \text{ hr } 10 \text{ mM sperm.} + 5 \text{ hr } 1 \text{ mM sperm.}$

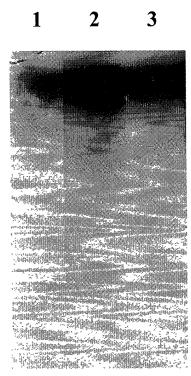


FIG. 2

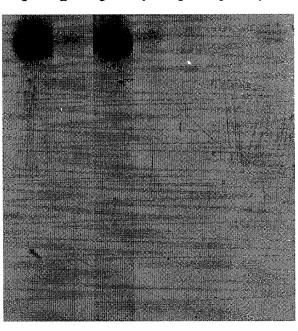
Control

Control + Spermidine 2

PGF-2 α (1 h 35 m)

PGF-2 α (1 h 35 m) + Spermidine PGF-2 α (1 h 35 m) + Spermidine

PGF-2 α (3 h 45 m) + Spermidine 2 PGF-2 α (3 h 45 m) + Spermidine



S K T G K H G H A K V H L V G I D I F T G K K Y GAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGC E D I C P S T H N M D V P N I K R N D F Q L I G ATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAGAGGACCTTCGTCTGCCTGAGGGA I Q D G Y L S L L Q D S G E V R E D L R L P E G GACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCCATG D L G K E I E Q K Y D C G E E I L I T V L S A M ACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA**TAA**CTGGCTTCCAGGGTGGCGGTGGTGGCAGCA TEEAAVAIKAMAK ${\tt TTTGACGTTTTATTTTGGTTTTCCTCACCCCTTCAAACTGTCGGGGAGACCCTGCCCTTCACCTAGCTCCCT}$ $\tt TGGCCAGGCATGAGGGAGCCATGGCCTTGGTGAAGCTACCTGCCTCTTCTCTCGCAGCCCTGATGGGGGAAA$ $\tt CTGTGGATTCTGGCAAATGGTCTTGTGTCCTTTATCCCACTCAAACCCATCTGGTCCCTGTTCTCCATAGT$ TCTATAGGGGTGACAAGAAGAGGGGGGGGGGGGGGGGGACACGATCCCTCCTCAGGCATCTGGGAAGGCCTTGC CCCCATGGGCTTTACCCTTTCCTGTGGGCTTTCTCCCTGACACATTTGTTAAAAATCAAACCTGAATAAAAC TACAAGTTTAATATGAAAAAAAAAAAAAAAAAAAAAAA

(972 NT, 109 aa)

(488 NT, 151 aa)

CA	GGT	CTA	.GAG	TTG	GAA	TCG	AAG	CCT	CTT.	AAA	ATG	GCA	GAT	GAI	TTG	GAC	TTC	GAG.	ACA	GGA	GAT	GCA(GGGG	
											M	A	D	D	L	D	F	E	\mathbf{T}	G	D	A	G	13
CC	TCA	.GCC	ACC	TTC	CCA	ATG	CAG'	TGC'	TCA	GCA	TTA	CGT	AAG	AAT	GGT	TTT	GTG	GTG	CTC	AAG	GGC	CGG	CCAT	144
A	S	A	T	F	P	M	Q	C	S	A	L	R	K	N	G	F	V	V	L	K	G	R	P	
GΊ	'AAC	ATC	GTC	GAG	ATG	TCT	ACT'	TCG	AAG.	ACT	GGC	AAG	CAT	GGC	CAT	GCC.	AAG	GTC	CAT	CTG	GTT	GGT.	ATTG	
С	K	I	V	E	Μ	S	\mathbf{T}	S	K	T	G	K	H	G	H	A	K	V	H	L	V	G	I	61
ATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGATGTCCCCAACATCAAAA									288															
D	I	F	T	G	K	K	Y	E	D	I	С	P	S	\mathbf{T}	Η	N	M	D	V	P	N	I	K	
GGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCCCTGCTCCAGGACAGTGGGGAGGTACGAG																								
R	N	D	F	Q	L	I	G	I	Q	D	G	Y	L	S	L	L	Q	D	S	G	E	V	R	109
AGGACCTTCGTCTGCCTGAGGGAGACCTTGGCAAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGATCC										432														
E	D	L	R	L	P	E	G	D	Ŀ	G	K	E	I	E	Q	K	Y	D	C	G	E	E	I	
TO	ATC	CACA	GTG	CTG	TCC	:GCC	ATG.	ACA	GAG	GAG	GCA	GCT	GTT	GCA	ATC	'AAG	GCC	ATG	GCA	AAA	TAA	CTG	GCTT	
L	I	\mathbf{T}	V	L	S	A	M	Т	E	E	Α	Α	V	Α	I	K	Α	M	A	K	*			154
CC	AGG	GTO	GCG	GTG	GTG	GCA	GCA	GTG.	ATC	CAT	'GAG	CCT	ACA	GAC	GCC	CCT	CCC	CCA	GCT	CTG	GCT	GGG	CCCT	576
TO	GC1	'GGA	CTC	CTA	TCC	TAA	TTA'	TTT	GAC	GTT	'TTA	TTT	TGG	TTT	TCC	TCA	CCC	CTT	CAA	ACT	GTC	GGG	GAGA	
CC	CTC	CCC	TTC	ACC	TAG	CTC	CCT	TGG	CCA	GGC	ATG	AGG	GAG	CCP	TGG	CCT	TGG	TGA	AGC	TAC	CTG	CCT	CTTC	720
TO	CTCC	CAC	;CCC	TGA	TGG	GGG	AAA	GGG.	AGT	GGG	TAC	TGC	CTG	TGC	TTT	'AGG	TTC	CCC	TCT	CCC	TTT	TTC	TTTT	
T	TA	CAP	TTT	GGA	ATC	'AGA	AAG	CTG	TGG	ATT	CTG	GCA	TAA	GGT	CTT	GTG	TCC	TTT	ATC	CCA	CTC	AAA	CCCA	864
T	TGC	TCC	CCI	GTT	CTC	CAT	AGT	CCT	TCA	CCC	CCA!	AGC	ACC	ACT	GAC	'AGA	CTG	GGG	ACC	AGC	CCC	CTT	CCCT	
GC	CTC	TGT	CTC	TTC	CCA	AAC	CCC	TCT	ATA	GGG	GTG	ACA	AGA	AGA	AGGP	.GGG	GGG	GAG	GGG	ACA	CGA	TCC	CTCC	1008
T	CAGO	3CAT	CTG	GGA	AGG	CCT	TGC	CCC	CAT	GGG	CTT	TAC	CCT	TTC	CTC	TGG	GCT	TTC	TCC	CTG	ACA	CAT	TTGT	
TI	AAA	TA	'AAA	CCT	GAA	AAT	AAC	TAC	AAG	TTT	TAA'	ATG	AAA	AAA	AAA	AAA	AAA	AAA	AAA					1139

(1139 NT, 154 aa)

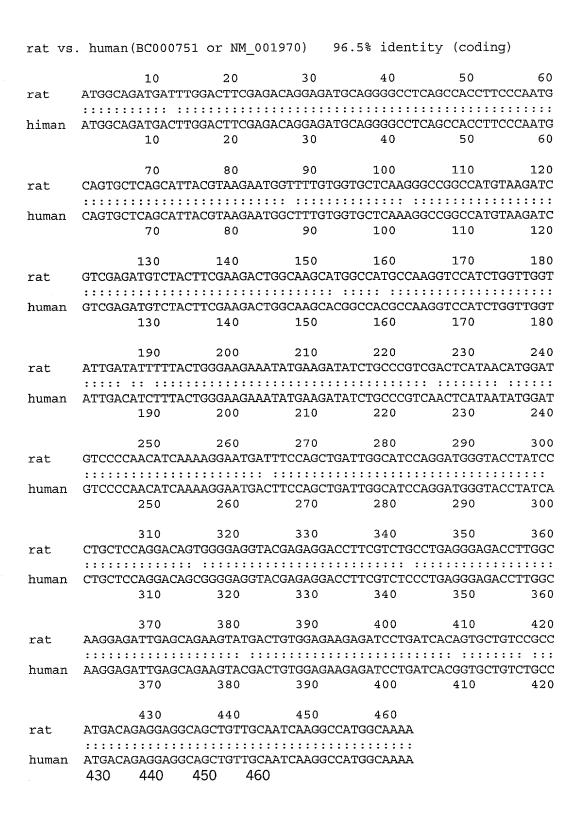


Figure 6

rat vs. human (NM 020390) 72.5% identity (coding) ATGGCAGATGATTTGGACTTCGAGACAGGAGATGCAGGGGCCTCAGCCACCTTCCCAATG rat :: ::::::: ::::: :: ::: : ::: ::: ::::::: :: ::::::: human ATGGCAGACGAAATTGATTTCACTACTGGAGATGCCGGGGCTTCCAGCACTTACCCTATG rat CAGTGCTCGGCCTTGCGCAAAAACGGCTTCGTGGTGCTCAAAGGACGACCATGCAAAATA human rat GTGGAGATGTCAACTTCCAAAACTGGAAAGCATGGTCATGCCAAGGTTCACCTTGTTGGA human ATTGATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT rat ATTGATATTTTCACGGGCAAAAAATATGAAGATATTTGTCCTTCTACTCACAACATGGAT human GTCCCCAACATCAAAAGGAATGATTTCCAGCTGATTGGCATCCAGGATGGGTACCTATCC rat :: :: :: :: :: :: :::::: :: :::::: :::: :: ::::: ::::: ::: GTTCCAAATATTAAGAGAAATGATTATCAACTGATATGCATTCAAGATGGTTACCTTTCC rat :: : ::: :: :: :: :::::: ::: ::::: :: :: :: :: CTGCTGACAGAAACTGGTGAAGTTCGTGAGGATCTTAAACTGCCAGAAGGTGAACTAGGC human AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCCGCC rat :: :: : :: ::::: : : : : ::: human ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA rat :: :: ::::: :: :: :: ATGAGTGAAGAATATGCTGTAGCCATAAAACCCT--GCAAAT human

Figure 7

rat vs. mouse (BC003889) 98.3% identity (coding)

	10	20	30	40	50	60							
rat	ATGGCAGATGATTT												
Luc	:::::::::::::::::::::::::::::::::::::::			::::::::									
mouse	ATGGCAGATGATTT	GGACTTCGAG.	ACAGGAGATG	CAGGGGCCTC	AGCCACCTTC	CCAATG							
	10	20	30	40	50	60							
	70	80	90	100	110	120							
rat	CAGTGCTCAGCATT	ACGTAAGAAT	GGTTTTGTGG										
	:::::::::::::::::::::::::::::::::::::::				:::::::::								
mouse	CAGTGCTCAGCATTA				CGGCCATGT <i>F</i> 110	AGATC 120							
	70	80	90	100	110	120							
	130	140	150	160	170	180							
rat													
rat GTCGAGATGTCTACTTCGAAGACTGGCAAGCATGCCAAGGTCCATCTGGTT													
mouse	GTCGAGATGTCTAC					GTTGGC							
	130	140	150	160	170	180							
	190	200	210	220	230	240							
rat	ATTGATATTTTTACTGGGAAGAAATATGAAGATATCTGCCCGTCGACTCATAACATGGAT												
	::::::::::::::::::::::::::::::::::::::												
mouse			TATGAAGATA 210	220	GACTCATAA 230	240							
	190	200	210	220	250	240							
	250	260	270	280	290	300							
rat	GTCCCCAACATCAA				GGATGGGTA	CCTATCC							
	::::::::::::::												
mouse	GTCCCCAACATCAA	ACGGAATGAC	TTCCAGCTGA	ATTGGCATCC	AGGATGGGTA	CCTATCC							
	250	260	270	280	290	300							
	310	320	330	340	350	360							
rat	CTGCTCCAGGACAG				TGAGGGAGAG	CTIGGC							
mouse	::::::::::::::::::::::::::::::::::::::					CCTTGGC							
mouse	310	320	330	340	350	360							
	310												
	370	380	390	400	410	420							
rat	AAGGAGATTGAGCA	GAAGTATGAC	TGTGGAGAA	GAGATCCTGA:	CACAGTGCT(GTCCGCC							
mouse	AAGGAGATTGAGCAGAAGTATGACTGTGGAGAAGAGATCCTGATCACAGTGCTGTCTGCC												
	370	380	390	400	410	420							
	420	440	450	460									
rat	430 ATGACAGAGGAGG	440 ACCTCTTCC											
rat	AIGACAGAGGAGGC												
mouse ATGACAGAGGAGGCAGCTGTTGCAATCAAGGCCATGGCAAAA													
	430	440	450	460									

Figure 8

rat vs.	human(BC000751	or NM_00)1970) 1	00.0% ident	ity	
	10	20	30	40	50	60
rat	MADDLDFETGDAGAS	ATFPMQCS/	ALRKNGFVVL	KGRPCKIVEMS	TSKTGKHGH	4KVHLVG
	:::::::::::::::::::::::::::::::::::::::			:::::::::	::::::::	::::::
human	MADDLDFETGDAGAS	ATFPMQCS/	ALRKNGFVVL	KGRPCKIVEMS	TSKTGKHGH	4KVHLVG
	10	20	30	40	50	60
	70	80	90	100	110	120
rat	IDIFTGKKYEDICPS	THNMDVPN	EKRNDFQLIG	IQDGYLSLLQD	SGEVREDLRI	JPEGDLG
	:::::::::::::::::::::::::::::::::::::::		::::::::	:::::::::	:::::::	::::::
human	IDIFTGKKYEDICPS'	THNMDVPN	KRNDFQLIG	IQDGYLSLLQD	SGEVREDLRI	_PEGDLG
	70	80	90	100	110	120
	130	140	150			
rat	KEIEQKYDCGEEILI	TVLSAMTE	EAAVAIKAMA	.K		
	:::::::::::::::::::::::::::::::::::::::	:				
human	KEIEQKYDCGEEILI	TVLSAMTE	EAAVAIKAMA	K		
	130	140	150			

rat vs. human(NM 020390) 82.5% identity ${\tt MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG}$ rat human MADEIDFTTGDAGASSTYPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG rat human IDIFTGKKYEDICPSTHNMDVPNIKRNDYQLICIQDGYLSLLTETGEVREDLKLPEGELG KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK rat :::: ::. ::.. ..:. ::.:: human KEIEGKYNAGEDVQVSVMCAMSEEYAVAIKP-CK

MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG rat ${\tt MADDLDFETGDAGASATFPMQCSALRKNGFVVLKGRPCKIVEMSTSKTGKHGHAKVHLVG}$ mouse IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG rat IDIFTGKKYEDICPSTHNMDVPNIKRNDFQLIGIQDGYLSLLQDSGEVREDLRLPEGDLG mouse rat KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK mouse KEIEQKYDCGEEILITVLSAMTEEAAVAIKAMAK

rat vs. mouse (BC003889)100.0% identity

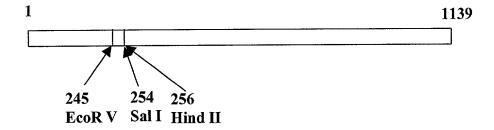


Figure 12

Southern Blot of Rat Genomic DNA

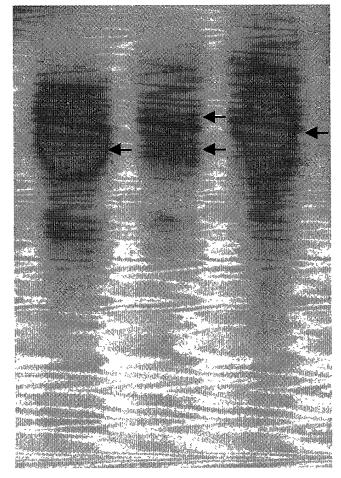
EcoRV

Rat eIF-5A 1139 bp

EcoR1 EcoRV BamH1

Full-length rat eIF-5A cDNA probe

FIG. 13



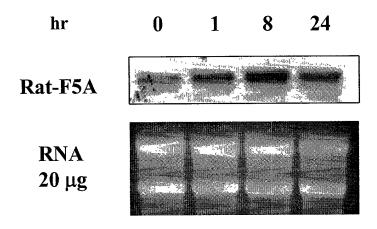


Figure 14

GCTGTGTATTATTGGGCCCATAAGAACCACATACCTGTGCTGAGTCCTGCACTCACAGACGGCTCACTGGGT A V Y Y W A H K N H I P V L S P A L T D G S L G D M I F F H S Y K N P G L V L D I V E D L R L I N M Q A I F A K R T G M I I L G G G V V K H H I GCCAATGCTAACCTCATGCGGAATGGAGCTGACTACGCTGTTTATATCAACACAGCCCAGGAGTTTGATGGC ANANLMRNGADYAVYINTAQEFDG S D S G A R P D E A V S W G K I R M D A Q P V K GTCTATGCTGATGCATCTCTGGTTTTCCCCTTGCTGGTGGCTGAGACATTCGCCCAAAAGGCAGATGCCTTC V Y A D A S L V F P L L V A E T F A Q K A D A F RAEKNED GCATACCAACCCCTCCTGGGCCCTCTCCTTGGTCAGCAGCATCTTGAGAATAAATGGCCTTTTTGTTGGTTT CTGTAAAAAAAGGACTTTAAAAAAAAAAAAA

(606 NT, 151 aa)

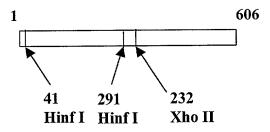


Figure 16

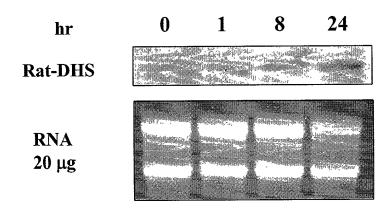


Figure 17

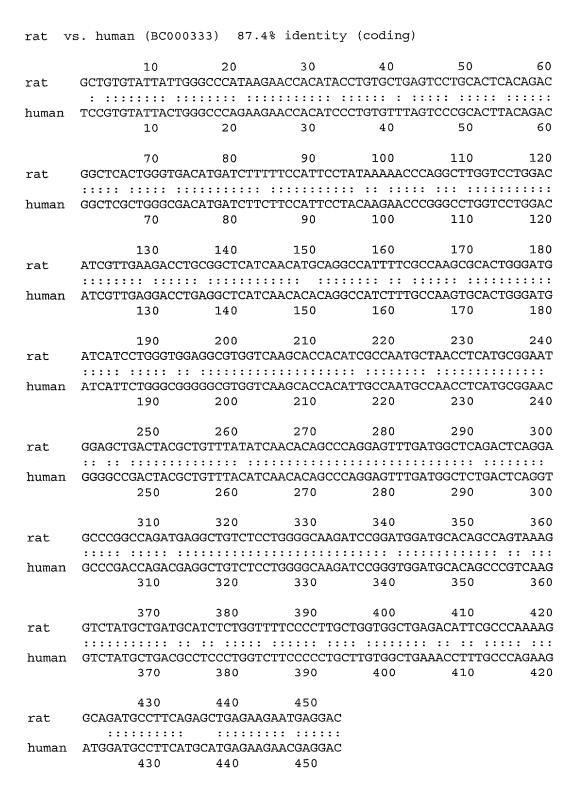


Figure 18

FIG. 19

Hours After PGF-2a Treatment

0 1 24

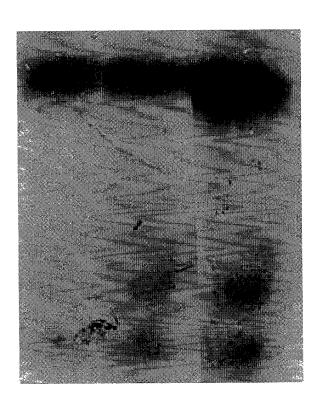




Figure 20

FIG. 21

Southern Blot of Rat Genomic DNA

Partial rat DHS cDNA probe

